

Date: Fri, 4 Nov 94 04:30:46 PST  
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>  
Errors-To: Ham-Space-Errors@UCSD.Edu  
Reply-To: Ham-Space@UCSD.Edu  
Precedence: List  
Subject: Ham-Space Digest V94 #311  
To: Ham-Space

Ham-Space Digest                      Fri, 4 Nov 94                      Volume 94 : Issue 311

Today's Topics:

\*\*\* Q: WHAT KIND OF PEOPLE ON THE NET ?  
        AMRAD BBS Number  
        APT-Satellites: Report NOV 01, 1994  
        Contacting the MIR. Help! (2 msgs)  
        Getting Started on Satellites HELP!  
        Keplerian data for NOAA birds  
        Satellite elements  
        Satellite to Internet Access?  
Wanted: Info on geeking at sea via satellite  
WTB: Ten-Tec Mode B Satellite Station

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>  
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 3 Nov 1994 17:05:14 GMT  
From: cisitm@albert.cad.cea.fr (Pierre Didierjean)  
Subject: \*\*\* Q: WHAT KIND OF PEOPLE ON THE NET ?

I'd like to know what kind of people i find on the net.

Students, Commercials, Adminitrations, Scientifics or what ??

Is anybody knows that or have statistical results ?

What are YOU doing in life ?

I am a system administrator.

Thanks for the answers and sorry for my english .....

Bye

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+-----+
|      Pierre DIDIERJEAN      |
|                               |
|      Administrateur Systeme UNIX      |
|      Cisi, Aix-en-Provence      |
|      France      |
+-----+
| email :  cisitm@albert.cad.cea.fr      |
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Date: 3 Nov 94 20:07:39 GMT  
From: ROBERTSM@JSC.MIL  
Subject: AMRAD BBS Number

Does anyone have a number for the AMRAD BBS. The old number was  
(703) 734-1387, but now it is a voice number.  
Thanks, Mel W3MR robertsm@jsc.mil

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Date: 2 Nov 1994 08:41:42 GMT  
From: peter.henne@gmd.de (Peter Henne)  
Subject: APT-Satellites: Report NOV 01, 1994

Observed at station 50.7 NLat, 7.1 ELon, NOV 01, 1994

NOAA-9: APT 137.62 On  
NOAA-10: APT 137.50 \*OFF\*  
NOAA-11: APT 137.62 Burst on, no image  
NOAA-12: APT 137.50 On  
Meteor 2-21: APT 137.85 \*OFF\*  
Meteor 3-5: APT 137.85 On  
Okean 1-7: APT 137.40 \*OFF\*

Okean 1-7 was quiet during all available passes. There is  
not much hope that we will see regular APT-service. Imaging

of NOAA-11 is dead. NOAA-10 APT is off due to VHF-conflict  
with NOAA-12. BTW: Good opportunity for visual observations  
of spacestation MIR from europe - passed Cassiopeia yesterday  
NOV 01, 16h50'51" UT brighter than mag 1.

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+-----+
|Peter Henne (peter.henne@gmd.de)      |
|      (henne@gmd.de)                  |
|German Nat.Research Center.f.Comp.Science |
|D-53754 St.AUGUSTIN, Germany          |
+-----+
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Date: 31 Oct 94 02:10:40 +0800  
From: asirene@v9001.ntu.ac.sg  
Subject: Contacting the MIR. Help!

Hi,

Can anyone tell me the minimum requirement to work the MIR.  
I am using a 7/8 lambda Diamond F-22 vertical mounted on roof. Also  
using IC-22A on 145.550 MHz with 10watts output. Is this sufficient  
to work the MIR? The last pass we tried was about 440km nearest.

Tried for abt 50 minutes about the 3 minute window. No QRM  
or obstructions but QSO either. Would appreciate any help. Would a  
YAGI be necessary?

73,  
RSM

-----  
Date: Thu, 3 Nov 1994 14:44:08 GMT  
From: zlau@arrl.org (Zack Lau (KH6CP))  
Subject: Contacting the MIR. Help!

Greg Dolkas KD6KGW (greg@core.rose.hp.com) wrote:  
: Zack Lau (KH6CP) (zlau@arrl.org) wrote:  
: : Gary's analysis makes sense if you are interested maximizing the  
: : time you can work MIR, as opposed to just working them once.  
: :  
: Sorry, Zack, but I have to agree with Gary. In my experience working RS-10  
: over the past few years, a simple vertical antenna works best. I use a  
: home-brew 5/8 J-pole most of the time, with 10-30 watts. On really bad  
: passes (close to the horizon) I switch over to a 5 element beam aimed at  
: the horizon. In the 50+ contacts made, I've experienced a high angle dropout

: once or twice, when the satellite was \*right\* overhead (89.something degrees).  
: Those happen very rarely, and the dropout lasted less than a minute.  
: good candidates (for phone; I'm not up on packet sats yet).

According to my calculations, the minimum you need to work MIR (height nominally 400 km) is 10 milliwatts to an antenna with 0 dBi gain straight up. I made the assumption that the astronaut isn't an FM DXer, and isn't used to pulling weak FM signals out of the noise (-118 dBm needed for a good signal)

Due to the increase in path loss, you need at least 15 dB more signal when MIR is at the horizon. This assumes that you have a clear horizon. When MIR is 8 degrees above the horizon, you still need 11 dB more signal than when it is overhead.

Now, what does this mean in practical terms, since most people run more than 10 milliwatts? It just means that you probably have a 10 dB or so advantage if you are located in a good spot as opposed to someone on the edge of the footprint. This is where MIR is fundamentally different from RS-10. With RS-10, you can still work people if you are 10 dB weaker than the strongest stations. Signals 10 dB weaker in an FM receiver get covered up completely.

A statistical analysis of possible MIR paths doesn't make sense to me. If I wanted to work MIR I would look at the actual paths and choose the best ones. Then I would make sure my antenna and location was appropriate for the path. The statistical analysis that might be useful is to analyze the locations of stations that have worked people in space, to see what places seem to have the edge.

If I was really serious I might even alter my travel plans a little to give myself a better chance. After all, traveling hundreds or thousands of miles for business or vacation isn't unusual anymore. Personally, I'd rather vacation in Hawaii than in New York City, even though it is a longer trip that makes carrying a carload of stuff difficult. Carrying something along to work MIR ought to be easy compared to bringing something to work through Oscar 13.

--

Zack Lau KH6CP/1                      2 way QRP WAS  
   8 States on 10 GHz  
Internet: zlau@arrl.org    10 grids on 2304 MHz

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Date: Thu, 3 Nov 1994 01:04:00 GMT  
From: eareckso@netcom.com (William A. Eareckson)  
Subject: Getting Started on Satellites HELP!

Darryl Millson (ag845@FreeNet.Carleton.CA) wrote:

: Hello, I'm a 'year-old ham' and am interested in receiving satellite  
: images (eg. weather) and contacts. Could someone give me some information  
: on what type of antenna's to make( or buy) and what i need in terms of  
: radio equipment and software to run on my 486? At present I have a 2m  
: handheld and a bunch of dusty radio-shack scanners! I realize that there  
: is a lot of info I need to catch up on, but any help you can offer will  
: point me in the proper direction. Thank you for your help everyone! 73's

Another excellent publication to consider is:

WeatherSat Ink  
c/o Bluebird Greenhouses  
4821 Jessie Dr.  
Apex, N.C. 27502

Published quarterly on each solstice or equinox, \$18 yearly.

Multifax 6.0 software/hardware, modified Bearcat 145 or equivalent scanner,  
must have at least 50khz bandwidth for full 256 grey-scale capability. I use  
a steerable cross-yagic with "Hamtronics" preamp.--The Multifax demodulator  
hardware is also GOES WEFAX capable.

Bill Eareckson  
eareckso@netcom.com

-----  
Date: Thu, 3 Nov 1994 01:08:04 GMT  
From: eareckso@netcom.com (William A. Eareckson)  
Subject: Keplerian data for NOAA birds

drangmei@ll.mit.edu wrote:

: Where can I get Keplerian elements for NOAA-11, NOAA-12, NOAA-13 weather  
: satellites on the net?

ftp: archive.afit.af.mil /pub/space

Bill Eareckson  
eareckso@netcom.com

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Date: Thu, 3 Nov 1994 01:14:32 GMT  
From: eareckso@netcom.com (William A. Eareckson)  
Subject: Satellite elements

Timothy Toroni (timothy@indy.net) wrote:  
: Is there someone out there that could post some satellite elements?

Try subscribing to: sci.space.news (Tom Kelso) posts them regularly there.

Also you can ftp: archive.afit.af.mil /pub/space.

I can post them but do not wish to duplicate what's already available unless you guys don't have access to the above.

Bill Eareckson  
eareckso@netcom.com

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Date: 2 Nov 1994 04:51:55 GMT  
From: jls@capedata.iii.net (Jeffery L. Stutzman)  
Subject: Satellite to Internet Access?

Can anyone tell me if there is a program or script written to link a satellite packet to an internet node?

Jeffery Stutzman/N1LUY  
Buzzards Bay, Ma.  
MANU TENERE MARE SUPREMUS

-----  
Date: 03 Nov 1994 18:43:34 GMT  
From: hermit@cats.UCSC.EDU (William R. Ward)  
Subject: Wanted: Info on geeking at sea via satellite

We purchased a sailboat recently and plan to do some medium to long range cruising and would like to know if there's any way we can stay in touch with Usenet while we're gone.

I'm not currently a Ham but have been seriously considering it, and am not afraid of Morse Code.. I learned it in the Scouts but forgot it since then. So I'm willing to go pretty far to get licensed for this if necessary and am curious about serious amateur radio as a way of keeping in touch with the world while at sea. Are there any ways to get email and/or news via satellite while at sea? And the more difficult question (I would think) is how can I send back my replies?

I posted on rec.boats and it was suggested that I ask here. I'll try to keep an eye on the group for a response, but I would appreciate responses sent via email in addition to posting here in case it expires before I see it.

Thanks a lot for any help you may be able to provide!

--Bill.

--

William R Ward                      \_\_o \_\_o    1803 Mission St. #339  
Bay View Software and Consulting   \_-\<,-\<,\_   Santa Cruz CA 95060 USA  
Voicemail +1 408/479-4072            ( )/---/ ( ) hermit@cats.ucsc.edu  
Call my tree-structured BBS: +1 408/457-1357 (300-14400 baud, 8/N/1)  
(Finger hermit@ucscb.ucsc.edu for PGP public key)

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Date: 3 Nov 1994 09:36:24 GMT  
From: JJENSEN@VAX1.MANKATO.MSUS.EDU (Joel Jensen, KF0VB)  
Subject: WTB: Ten-Tec Mode B Satellite Station

In article <39aanq\$1tp@nitrogen.mankato.msus.edu>, JJENSEN@VAX1.MANKATO.MSUS.EDU (Joel Jensen, KF0VB) says:

>  
>Wanted: Ten-Tec Mode B Satellite "Station" unit. I think these are  
>still usable... Correct? I want to get on the "big birds" on the cheap...  
>Thinking this might be a good start.  
>  
>(The LEO's are getting kind of ho-hum)  
>  
>73s, Joel.

-----  
Date: Thu, 3 Nov 1994 19:59:41 GMT  
From: gary@ke4zv.atl.ga.us (Gary Coffman)

References<1994Nov1.151053.6310@arrl.org> <CynJyM.8x0@icon.rose.hp.com>,  
<1994Nov3.144408.13117@arrl.org>  
Reply-To: gary@ke4zv.atl.ga.us (Gary Coffman)  
Subject: Re: Contacting the MIR. Help!

In article <1994Nov3.144408.13117@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:

>Greg Dolkas KD6KGW (greg@core.rose.hp.com) wrote:  
>: Zack Lau (KH6CP) (zlau@arrl.org) wrote:  
>: : Gary's analysis makes sense if you are interested maximizing the  
>: : time you can work MIR, as opposed to just working them once.  
>: :  
>: Sorry, Zack, but I have to agree with Gary. In my experience working RS-10  
>: over the past few years, a simple vertical antenna works best.  
[snip]  
>According to my calculations, the minimum you need to work MIR  
>(height nominally 400 km) is 10 milliwatts to an antenna with 0  
>dBi gain straight up. I made the assumption that the astronaut  
>isn't an FM DXer, and isn't used to pulling weak FM signals out  
>of the noise (-118 dBm needed for a good signal)

That's a pretty good assumption. That's a 0.28 microvolt signal at the MIR crew's Japanese transceiver, assuming their external "vertical" antenna's gain equals out with their feedline loss. (I don't have exact figures on those two items.) That should give them something on the order of 12 db of quieting in their receiver for a 10 mW uplink ERP. Just 3 db more signal would give over 20 db of quieting thanks to the FM effect. So an uplink ERP of 20 mW should deliver armchair copy for the overhead pass.

>Due to the increase in path loss, you need at least 15 dB more  
>signal when MIR is at the horizon. This assumes that you have  
>a clear horizon. When MIR is 8 degrees above the horizon, you  
>still need 11 dB more signal than when it is overhead.

So you'd need about 1.26 watts ERP at the horizon, or about 0.5 watt ERP at 8 degrees elevation to deliver a 20 db+ quieting signal to MIR. If our poster had a typical 4 watt HT (he doesn't, he has a 10 watt rig at a fixed station due to license restrictions), then he'd have plenty of signal margin down to the horizon \*if he weren't penalized by an antenna putting a null at the horizon\*.

>Now, what does this mean in practical terms, since most people  
>run more than 10 milliwatts? It just means that you probably  
>have a 10 dB or so advantage if you are located in a good spot  
>as opposed to someone on the edge of the footprint. This is where  
>MIR is fundamentally different from RS-10. With RS-10, you can  
>still work people if you are 10 dB weaker than the strongest  
>stations. Signals 10 dB weaker in an FM receiver get covered up  
>completely.

But since our poster has a radio delivering 30 db more power than you postulate, he can easily put a full quieting signal to the horizon if he isn't penalized by a poor antenna choice. It's certainly true that FM capture means that stations only 3 db stronger will



take over the receiver on MIR, but this isn't a power war DXer pileup we're talking about. From his location, our questioner is going to be nearly the only station in the footprint. If there *are* others, they can take turns in an orderly manner *if* their window is large enough. It won't be if they can only use the very few moments of the overhead pass. If they can use the full 12 minutes of visibility available to them, their chances of a contact improve greatly.

>A statistical analysis of possible MIR paths doesn't make  
>sense to me. If I wanted to work MIR I would look at the  
>actual paths and choose the best ones. Then I would make sure  
>my antenna and location was appropriate for the path. The  
>statistical analysis that might be useful is to analyze the  
>locations of stations that have worked people in space, to  
>see what places seem to have the edge.

The problem with that idea is that MIR, and SAREX, operating schedules are erratic and not under your control, while the laws of celestial mechanics are fixed, and also not under your control. You don't know that they will be operating during the two minutes of the sole overhead pass you can reach on any given day, or that you could win a power war with a station with thousands of watts ERP if they were operating at that moment. You've got at least six passes each day where you'll be in the footprint, for at least 12 minutes in one case, if you can access them when they are less than 30 degrees above the horizon. So your window of opportunity for catching them on the air, and not being monopolized by an alligator, is much larger if you don't concentrate on just the overhead pass.

>If I was really serious I might even alter my travel plans  
>a little to give myself a better chance. After all,  
>traveling hundreds or thousands of miles for business  
>or vacation isn't unusual anymore. Personally, I'd rather  
>vacation in Hawaii than in New York City, even though it  
>is a longer trip that makes carrying a carload of stuff  
>difficult. Carrying something along to work MIR ought  
>to be easy compared to bringing something to worth through  
>Oscar 13.

Well with current MIR operating habits you'd have to travel to Europe, and compete with the guys with thousands of watts ERP, since that's the only time MIR is currently operational due to their power problems. That's supposed to be fixed soon, and we should be able to go back to having leisurely QSOs with the cosmonauts any time they are above our local horizon. It normally helps if you speak fluent Russian, though right now you'd do better to speak German. The cosmonauts typically aren't DXers, and like to chat, if you speak their language.

With their aviation English, hello-goodbye type contacts are all you can expect if you don't speak their language. Remember the amateur radio gear is on MIR for \*their\* recreation, not your award chasing. Respect that.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		emory!kd4nc!ke4zv!gary
534 Shannon Way		Guaranteed!		gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244				

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Date: Wed, 2 Nov 1994 20:25:20 GMT  
From: zlau@arrl.org (Zack Lau (KH6CP))

References<1994Oct31.195548.844@ke4zv.atl.ga.us> <1994Nov1.151053.6310@arrl.org>,  
<1994Nov1.235758.7561@ke4zv.atl.ga.us>  
Subject: Re: Contacting the MIR. Help!

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: In article <1994Nov1.151053.6310@arrl.org> zlau@arrl.org (Zack Lau (KH6CP))  
writes:

: >Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:

: >: In article <n7ryw.32.00171C3C@teleport.com> n7ryw@teleport.com (William Roth)  
writes:

: >: >In article <1994Oct31.021040.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg  
writes:

: >: >> Can anyone tell me the minimum requirement to work the MIR.

: > ^^^^^^^

: >: Unfortunately, this is bad advice. An analysis of all possible passes

: >: for a LEO sat shows that it will spend the majority of the time you

: >: are in it's footprint at an angle of less than 30 degrees above the

: >

: >Gary's inappropriate and lengthy analysis deleted.

: I'm sorry you choose to reject AMSAT's best advice (it's not my

: analysis, the work was done by brighter and more capable people

: than me).

The fundamental problem with the analysis  
is it doesn't answer the question,  
which I also forgot to answer....

\*\*\* Can I work MIR with what I have? \*\*\*

\*\*\* Yes, I think people have even done it with a handheld transceiver \*\*

: > Minimal doppler

: In point of fact, doppler is changing most rapidly during the  
: overhead portion of the pass as range and bearing from your  
: station are changing most rapidly. Doppler changes are much  
: less during the lower inclination parts of the pass.

I stand corrected on this point.

--

Zack Lau KH6CP/1                    2 way QRP WAS  
                                     8 States on 10 GHz  
Internet: zlau@arrl.org    10 grids on 2304 MHz

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End of Ham-Space Digest V94 #311

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